

Appl. No. 10/708,642
Amdt. dated November 16, 2005
Reply to Office action of September 29, 2005

Listing of Claims:

1. (Currently amended) A front-end array process for making a liquid crystal display panel, comprising:
depositing a molybdenum-containing metal layer on a glass substrate;
5 forming a patterned photoresist ~~and defining a gate and word line array pattern on~~
said molybdenum-containing metal layer, wherein said patterned photoresist
defines a gate and word line array pattern; and
using said patterned photoresist as an etching ~~hard~~ mask, uniformly etching said
molybdenum-containing metal layer to form said gate and word line array
10 pattern having ~~slightly~~ substantially oblique sidewalls, wherein said etching of
said molybdenum-containing metal layer uses gas mixture.
2. (Original) The front-end array process for making a liquid crystal display panel
according to claim 1 wherein after said etching of said molybdenum-containing metal
15 layer, an over etching is carried out.
3. (Currently amended) The front-end array process for making a liquid crystal display
panel according to claim 1 wherein ~~oxygen/fluorine~~ fluorine/oxygen containing gas
mixture is SF₆/O₂ having a ratio of about 700sccm/300sccm.
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4. (Original) The front-end array process for making a liquid crystal display panel
according to claim 1 wherein said etching of said molybdenum-containing metal layer is
executed under a process pressure higher than 25 mTorr.
- 25 5. (Original) The front-end array process for making a liquid crystal display panel
according to claim 1 wherein said etching of said molybdenum-containing metal layer is
further controlled by a source power, a bias power, process pressure, oxygen flowrate and
flowrate of fluorine containing gas.

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6. (Original) The front-end array process for making a liquid crystal display panel according to claim 1 wherein said molybdenum-containing metal layer is a dual-metal layer.

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7. (Currently amended) The front-end array process for making a liquid crystal display panel according to claim 6 wherein said dual-metal layer is Mo/AlNd, MoW/AlNd, or MoW/Al, wherein Mo and MoW are top layers, while AlNd and Al are bottom layers.

10 8. (Original) The front-end array process for making a liquid crystal display panel according to claim 1 wherein said etching of said molybdenum-containing metal layer is detected by an end-point detection method at an wavelength of about 704nm.

15 9. (Original) The front-end array process for making a liquid crystal display panel according to claim 1 wherein said gas mixture is oxygen/fluorine containing.

10. (Original) The front-end array process for making a liquid crystal display panel according to claim 1 wherein said gas mixture is oxygen/chlorine containing.

20 11. (Original) The front-end array process for making a liquid crystal display panel according to claim 1 wherein said gas mixture is oxygen/chlorine/fluorine containing.

25 12. (Original) The front-end array process for making a liquid crystal display panel according to claim 1 wherein said gas mixture is SiF₆/O₂ containing.

13. (Original) A front-end array process for making a liquid crystal display panel, comprising:

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depositing a molybdenum-containing metal layer on a glass substrate;
forming a patterned photoresist and defining a gate and word line array pattern on
said molybdenum-containing metal layer; and
etching said molybdenum-containing metal layer by said patterned photoresist to
5 form said gate and word line array pattern.

14. (Currently amended) The front-end array process for making a liquid crystal display
panel according to claim 13 wherein said gate and word line array pattern have
~~slightly~~ substantially oblique sidewalls.

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15. (Original) The front-end array process for making a liquid crystal display panel
according to claim 13 wherein after said etching of said molybdenum-containing
metal layer, an over etching is carried out.

15 16. (Currently amended) The front-end array process for making a liquid crystal display
panel according to claim 13 wherein ~~oxygen/fluorine~~ fluorine/oxygen containing gas
mixture is SF₆/O₂ having a ratio of about 700sccm/300sccm.

20 17. (Original) The front-end array process for making a liquid crystal display panel
according to claim 13 wherein said etching of said molybdenum-containing metal
layer is executed under a process pressure higher than 25 mTorr.

25 18. (Original) The front-end array process for making a liquid crystal display panel
according to claim 13 wherein said etching of said molybdenum-containing metal
layer is detected by an end-point detection method at a wavelength of about 704nm.

19. (Original) The front-end array process for making a liquid crystal display panel
according to claim 13 wherein said molybdenum-containing metal layer is a

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dual-metal layer.

20. (Currently amended) The front-end array process for making a liquid crystal display panel according to claim 19 wherein said dual-metal layer is Mo/AlNd, MoW/AlNd, or MoW/Al, wherein Mo and MoW are top layers, while AlNd and Al are bottom layers.
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